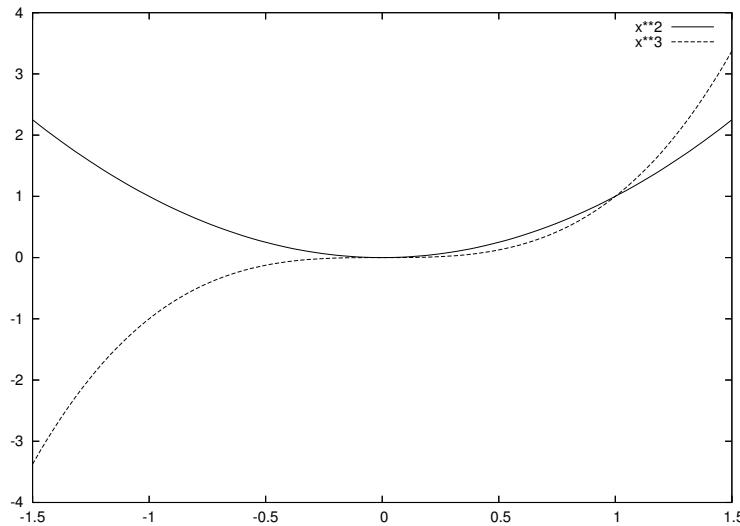


Name _____ Student Number _____

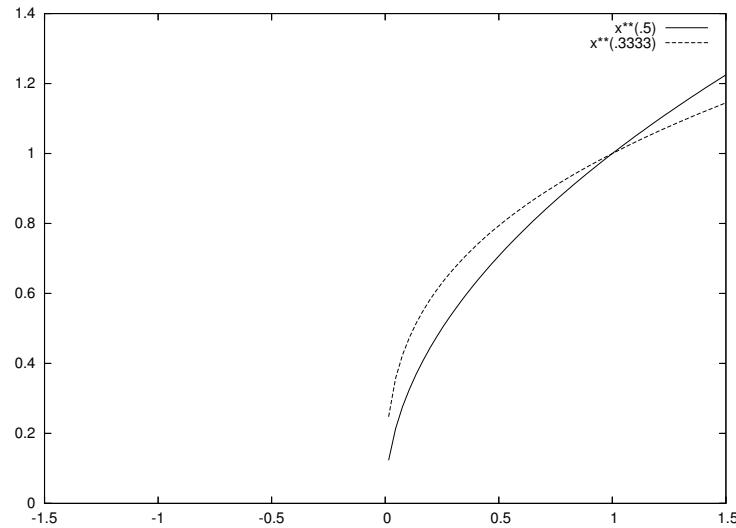
All solutions are to be presented on the paper in the space provided. The quiz is open book. You can discuss the problem with others and ask the TA questions.

(1) Sketch the following graphs. Use the same axis for each part. That is, part (a) on one axis, part (b) on a different axis etc. Label at least one obvious point on the graph.

(a) $f(x) = x^2$ and $f(x) = x^3$

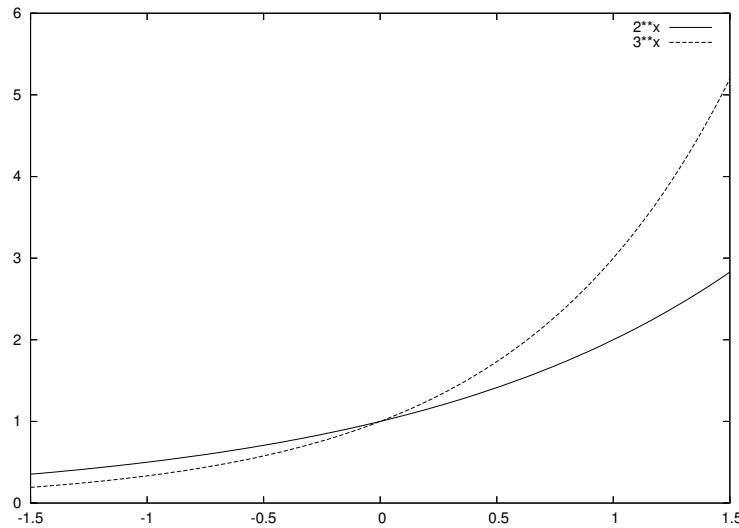


(b) $f(x) = \sqrt{x}$ and $f(x) = \sqrt[3]{x}$

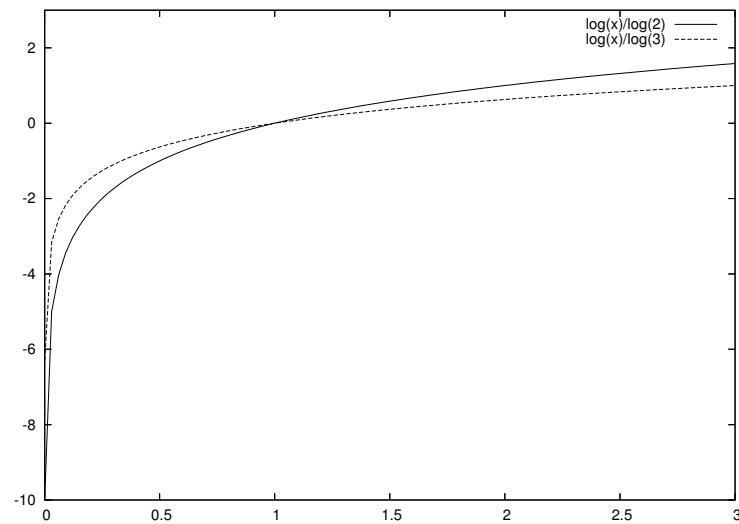


Over→

(c) $f(x) = 2^x$ and $f(x) = 3^x$

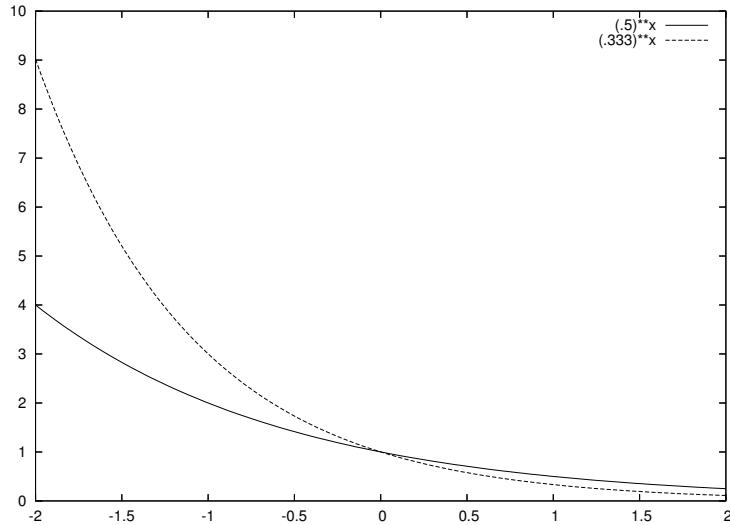


(d) $f(x) = \log_2 x$ and $f(x) = \log_3 3$



Over→

$$(e) \ f(x) = \left(\frac{1}{2}\right)^x \text{ and } f(x) = \left(\frac{1}{3}\right)^x$$



(2) Solve the following equations. Clearly use the appropriate inverse function.

$$(a) 2^{x^2-1} = 4$$

$$2^{x^2-1} = 4$$

$$\log_2 2^{x^2-1} = \log_2 4$$

$$x^2 - 1 = 2$$

$$x^2 = 3$$

$$x = \pm\sqrt{3}$$

$$(b) \log_3(x+1) = 2$$

$$\log_3(x+1) = 2$$

$$3^{\log_3(x+1)} = 3^2$$

$$x+1 = 9$$

$$x = 8$$